



**GAS FURNACES**  
**EL280DF**  
**ELITE® SERIES**  
**Downflow - Two-Stage Heat**

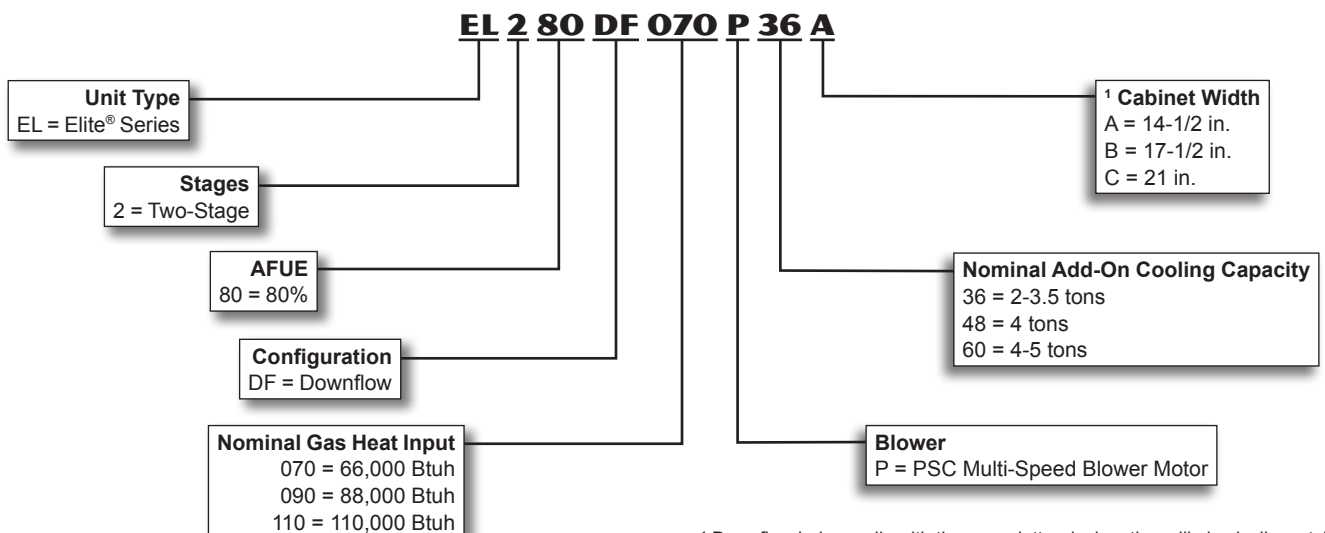
**PRODUCT SPECIFICATIONS**

Bulletin No. 210646  
April 2019  
Supersedes October 2018



**AFUE - 80%**  
**Input - 66,000 to 110,000 Btuh**  
**Nominal Add-on Cooling - 2 to 5 Tons**

**MODEL NUMBER IDENTIFICATION**



<sup>1</sup> Downflow indoor coils with the same letter designation will physically match the furnace supply air opening.

## FEATURES

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**NOTE - EL280DF FURNACES ARE NOT AVAILABLE IN CANADA!**

### WARRANTY

**Duralok™ Aluminized Steel Heat Exchanger** - Limited twenty year warranty in residential applications, ten years in non-residential applications.

**All other covered components** - Limited five year warranty in residential applications, one year in non-residential applications.

Refer to Lennox Equipment Limited Warranty certificate included with equipment for details.

### APPROVALS

Units are certified by AHRI.

Units tested and rated according to US DOE test procedures and FTC labeling regulations.

ISO 9001 Registered Manufacturing Quality System.

Blower data from unit tests conducted in Lennox Laboratory air test chamber.

#### California Only

If installed in South Coast Air Quality Management District (SCAQMD) only:

This furnace does not meet the SCAQMD Rule 1111 NO<sub>x</sub> emission limit (14 ng/J), and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the Clean Air Furnace Rebate Program:

[www.CleanAirFurnaceRebate.com](http://www.CleanAirFurnaceRebate.com).

If installed in San Joaquin Valley Air Pollution Control District (SJVAPCD) only:

This furnace does not meet the SJVAPCD Rule 4905 NO<sub>x</sub> emission limit (14 ng/J), and thus is subject to a mitigation fee of up to \$450.

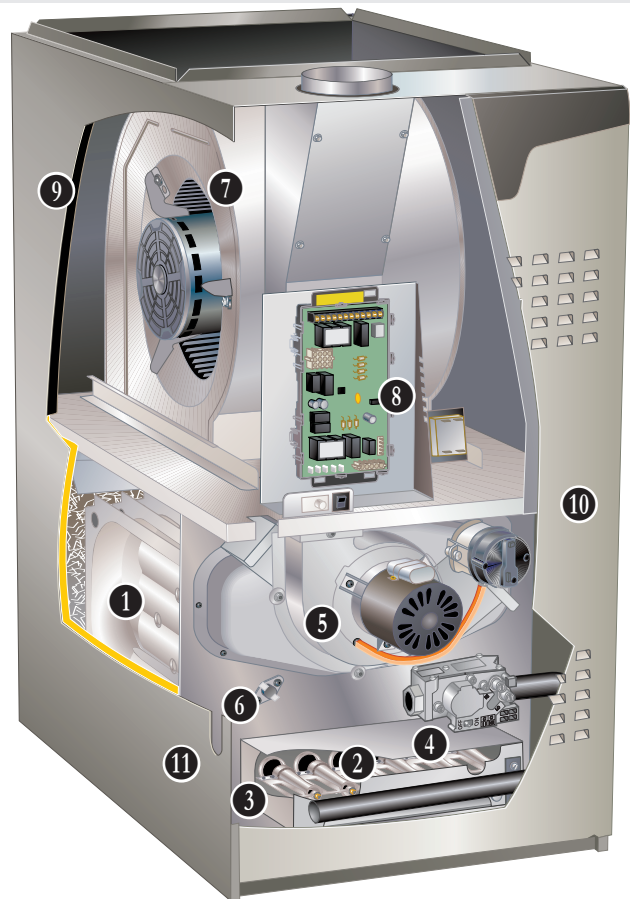
### APPLICATIONS

Input capacities of 66,000, 88,000 and 110,000 Btuh.

Energy efficiency (AFUE) of 80%.

Compact cabinet for utility room, alcove or closet or attic installation.

Lennox add-on indoor coils, high-efficiency air cleaners EL280DF / Page 2



and humidifiers can easily be added to furnace.

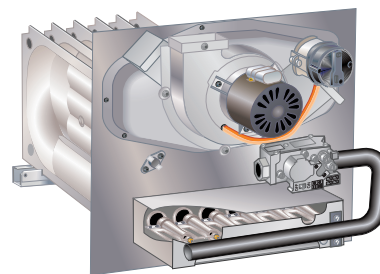
Shipped factory assembled with all controls installed and wired.

Each unit factory test operated to ensure proper operation.

**NOTE - FURNACES CANNOT BE TWINNED!**

### HEATING SYSTEM

- 1 Lennox Duralok™ Heat Exchanger Assembly**  
Heavy gauge aluminized steel heat exchanger.



Crimped seam clamshell type design.

Designed for normal expansion and contraction.

Minimum resistance to air flow.

Heat exchanger has been laboratory life

cycle tested in excess of industry standards.

Compact size of heat exchanger permits low overall design of furnace cabinet.

- 2 Inshot Burners**

Aluminized steel inshot burners provide efficient, trouble-free operation.

Burner venturi mixes air and gas in correct proportion for proper combustion.

Burner assembly is removable from the unit as a single component for ease of service.

## FEATURES

### HEATING SYSTEM (continued)

- 3 SureLight® Hot Surface Ignitor**  
Tough, reliable, long-life, trouble-free performance.  
Silicon nitride ignitor.  
Cemented to steatite block for protection against current leakage.  
Ignition leads are constructed of nickel plated copper and are enclosed in high temperature Teflon® insulation for dependable operation.

- 4 Two-Stage Gas Control Valve**  
24 volt redundant combination two-stage gas control valve combines manual shut off switch (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control.

- 5 Two-Speed Combustion Air Inducer**  
Heavy duty, permanent split capacitor (PSC) two-speed blower prepurges heat exchanger and safely vents flue products.  
Dual pressure switches (low fire/high fire) prove blower operation before allowing gas valve to open.  
Operates only during heating cycle.

- 6 Flame Rollout Switch**  
Manual reset switch is factory installed on burner box.  
Switch provides protection from abnormal operating conditions.

#### Limit Control

Automatic reset, primary and secondary limits are accurately located.

Primary limit factory installed on vestibule panel on all units, secondary limit factory installed on blower housing.

### Optional Accessories

#### High Altitude Pressure Switch Kit

Required on most units for proper unit operation at altitudes from 4501 to 10,000 ft.

#### Natural Gas to LPG/Propane Conversion Kit

Required for field changeover from natural gas to LPG/Propane.

#### LPG/Propane to Natural Gas Conversion Kit

Required for field changeover from LPG/Propane to natural gas.

### BLOWER

- 7** Multi-speed direct drive blower.  
Statically and dynamically balanced.  
Resiliently mounted.  
Blower assembly easily removed for servicing.  
Blower speeds are easily changed on the integrated furnace control. See blower performance tables.

### CONTROLS

**SureLight® Integrated Two-Stage Furnace Control**  
Contains all necessary controls and relays to operate furnace.

Combustion air inducer is operated by the integrated furnace control. Prior to ignition, a pre-purge cycle for 15 seconds is initiated. After the main burners are turned off, a post-purge cycle for 5 seconds is run.

Flame sensor assures safe and reliable operation.

Should loss of flame occur the integrated furnace control will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes.

Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service.

Jumper settings for single or two stage thermostat operation.

Two selectable 2nd stage recognition times (10 and 15 minutes) are available when the furnace is used with a single stage thermostat. When used with a two stage thermostat, furnace will only initiate second stage operation with a second stage thermostat demand.

Fan control consists of adjustable blower timed-off delay (60, 90, 120, 180 seconds - factory setting 90 seconds) and fixed blower timed-on delay (30 seconds heating, 2 seconds cooling).

For air-conditioning applications, blower is automatically energized on thermostat demand for cooling.

Two accessory terminals furnished for additional power supply requirements for 120 volt (less than 1 amp) power humidifiers and powered air cleaners. A separate 24V accessory terminal is also provided for low voltage accessories.

Ignition control has single red LED to indicate status and as an aid in troubleshooting.

#### 24 Volt Transformer

Furnished and factory installed outside of the control box. 40VA transformer has circuit breaker wired in series.

#### Field Wiring Make-Up Box

Furnished for line voltage wiring.

Factory installed internally on left side of furnace.

Box may be installed on right side of furnace.

## FEATURES

### CONTROLS (continued)

#### Optional Accessories

##### iComfort® E30 Smart Wi-Fi Thermostat

Wi-Fi enabled, electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat.

3 Heat/2 Cool.

Auto-changeover.

Controls dehumidification during cooling mode and humidification during heating mode.

Offers enhanced capabilities including humidification / dehumidification / dewpoint measurement and control, *Humiditrol*® control, and equipment maintenance reminders.

Easy to read 7 in. color touchscreen (measured diagonally).

LCD display with backlight shows the current and set temperature, time, inside relative humidity, system status (operating mode and schedules) and outside temperature (optional outdoor sensor required).

Smooth Setback Recovery starts system early to achieve setpoint at start of program period.

Compressor short-cycle protection (5 minutes).

Up to four separate schedules are available plus Schedule IQ™.

One-Touch Away Mode - A quick and easy way to set the cooling and heating setpoints while away.

Smart Away™ - Uses geo-fencing technology to determine when the homeowner is within a predetermined distance from the home to operate the system when leaving, away and arriving.

Apple HomeKit™ enabled, making it easy to control the E30 thermostat from an iPhone, iPad or iPod device. Use Siri® voice commands to control the E30 thermostat.

Amazon® Alexa-enabled, smart-home compatible. It works with Amazon Echo, Echo Dot and Tap devices.

Wi-Fi remote monitoring and adjustment through a home wireless network for desktop PCs, laptops and apps for smartphones or tablets.

High Definition Color Display, Mag-Mount, Smart Hub Controller, wallplate (for retrofit installations) furnished for easy installation.

Additional indoor air quality comfort products (PureAir™ Air Purification System, *Healthy Climate*® Humidifiers, *Humiditrol*® Enhanced Dehumidification Accessory, *Healthy Climate*® Energy/Heat Recovery Ventilators, *Healthy Climate*® Germicidal Lights) can be added to the system for a complete total-comfort system.

See the iComfort® E30 Smart Wi-Fi Thermostat Product Specifications bulletin in the Controls section for more information.



##### Remote Outdoor Temperature Sensor

Used with the iComfort® E30 Smart Thermostat.

When installed outdoors, sensor allows thermostat to display outdoor temperature. Sensor is auto-detected when connected to thermostat.

*NOTE - Sensor is required for the Enhanced Dehumidification Accessory (EDA).*



##### Thermostat

Thermostat (programmable/non-programmable) is not furnished with unit.

See Thermostat Product Specifications bulletins in Controls Section and Lennox Price Book for selection.

### CABINET

Low-profile, narrow width cabinet allows easy installation in downflow applications.

Heavy-gauge, cold rolled steel construction.

Pre-painted cabinet finish.

Flanges provided on return air opening for ease of plenum connection.

- 9 Fully insulated cabinet with foil faced insulation on sides and back of heating compartment and mat faced insulation in blower compartment.  
Sealed blower compartment. Inner blower compartment access panel seals blower compartment from air leakage.
- 10 Cabinet door can be removed without any tools  
Complete service access.  
Safety interlock switch automatically shuts off power to unit when inner blower compartment access panel is removed.
- 11 Gas piping and electrical inlets are provided in both sides of cabinet.

##### Coil Match-Up

All Lennox downflow indoor coils will physically match the furnace **supply air opening** with the same letter designation (A, B, C, D) as in the furnace model number.

##### Low Leakage Cabinet

All models have less than 2% air leakage and meet ANSI/ASHRAE Standard 193-2010 "Method of Test for Determining the Air Tightness of HVAC Equipment".

#### Optional Accessories

##### Downflow Combustible Flooring Base

Required for heating only units installed on combustible flooring.

Not required in add-on cooling applications.

See Dimension drawing.

## **FEATURES**

### **FILTER (not furnished)**

Filter and provisions for external mounting must be field provided.

### **Optional Accessories**

#### **Downflow Filter Kit**

Filter cabinet mounts directly on top of furnace.

“A” width cabinet includes one filter.

“B” and “C” width cabinets include two filters.

Filter rails are furnished.

Front access for servicing.

Cleanable filter(s) are furnished.

## SPECIFICATIONS

Gas Heating Performance		Model No.	EL280DF070P36A	EL280DF090P48B	EL280DF110P60C
		AHRI Ref. No.	5537379	5537380	5537381
		<sup>1</sup> AFUE	80%	80%	80%
<b>High Fire</b>	Input - Btuh	66,000	88,000	110,000	
	Output - Btuh	52,000	69,000	87,000	
		Temperature rise range - °F	30 - 60	35 - 65	40 - 70
		Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
<b>Low Fire</b>	Input - Btuh	43,000	57,000	72,000	
	Output - Btuh	35,000	46,000	59,000	
		Temperature rise range - °F	20 - 50	20 - 50	25 - 55
		Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	1.7 / 4.9	1.7 / 4.9	1.7 / 4.9
<b>High static - in. w.g.</b>	Heating	0.5	0.5	0.5	
	Cooling	0.5	0.5	0.5	
<b>Connections in.</b>	Flue connection - in. round	4	4	4	
	Gas pipe size IPS	1/2	1/2	1/2	
<b>Indoor Blower</b>	Wheel nominal diameter x width - in.	10 x 8	10 x 10	11-1/2 x 10	
	Motor output - hp	1/3	1/2	1	
	Tons of add-on cooling	2 - 3.5	3 - 4	4 - 5	
	Air Volume Range - cfm	717 - 1562	917 - 1929	1517 - 2760	
<b>Electrical Data</b>	Voltage	120 volts - 60 hertz - 1 phase			
	Blower motor full load amps	6.1	8.2	11.5	
	Maximum overcurrent protection	15	15	15	
<b>Shipping Data</b>	lbs. - 1 package	128	140	160	

NOTE - Filters and provisions for mounting are not furnished and must be field provided.

<sup>1</sup> Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

	"A" Width Models	"B" Width Models	"C" Width Models
<b>CABINET ACCESSORIES</b>			
Downflow Combustible Flooring Base	11M59	11M60	11M61
<b>CONTROLS</b>			
iComfort® E30 Smart Wi-Fi Thermostat	15S63	15S63	15S63
Remote Outdoor Temperature Sensor	X2658	X2658	X2658
<b>DOWNFLOW FILTER KITS</b>			
Downflow Filter Kit	51W06	51W07	51W08
No. and Size of filter - in.	(1) 20 x 20 x 1	(2) 16 x 20 x 1	(2) 16 x 20 x 1

## GAS HEAT ACCESSORIES

Input	High Altitude Pressure Switch Kit			Natural Gas to LPG/Propane Kit	LPG/Propane to Natural Gas Kit	Natural Gas High Altitude Orifice Kit	LPG/Propane High Altitude Orifice Kit
	0 - 4500 ft.	4501 - 7500 ft.	7501 - 10,000 ft.	0 - 7500 ft.	0 - 7500 ft.	7501 - 10,000 ft.	7501 - 10,000 ft.
070	No Change	No Change	73W36	11K51	77W09	73W37	11K46
090	No Change	No Change	73W36	11K51	77W09	73W37	11K46
110	No Change	No Change	73W35	11K51	77W09	73W37	11K46

## HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 4500 ft. above sea level without any modifications.

At altitudes above 4500 ft. units must be derated to match information in the shaded area shown below.

NOTE - This is the only permissible derate for these units.

Input	Gas Manifold Pressure (Outlet) in. w.g.											
	0 - 4500 Feet				4501 - 7500 Feet				7501 - 10,000 ft.			
	Natural Gas		LPG/Propane		Natural Gas		LPG/Propane		<sup>1</sup> Natural Gas		LPG/Propane	
	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire
070	3.5	1.7	10	4.9	3.2	1.5	10	4.9	3.5	1.7	10	4.9
090	3.5	1.7	10	4.9	3.0	1.5	10	4.9	3.5	1.7	10	4.9
110	3.5	1.7	10	4.9	3.2	1.5	10	4.9	3.5	1.7	10	4.9

<sup>1</sup> Natural Gas High Altitude Orifice Kit required.

## INSTALLATION CLEARANCES

Vent Type	Type B1	Type C
Sides	0 inches (0 mm)	<sup>1</sup> 0 inches (0 mm)
Rear	0 inches (0 mm)	0 inches (0 mm)
Top	1 inch (25 mm)	1 inch (25 mm)
Front	2-1/4 inches (57 mm)	2-1/4 inches (57 mm)
Front (alcove)	24 inches (610 mm)	24 inches (610 mm)
Front (service)	24 inches (610 mm)	24 inches (610 mm)
Floor	<sup>2</sup> Combustible	<sup>2</sup> Combustible
Flue	1 inch (25 mm)	6 inches (152 mm)

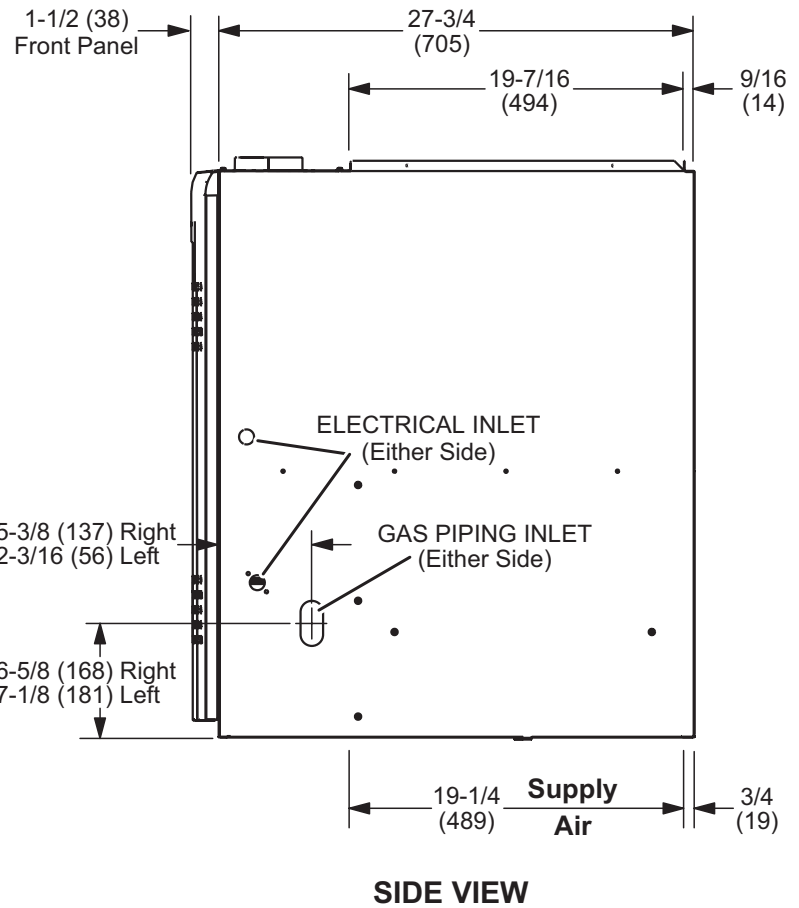
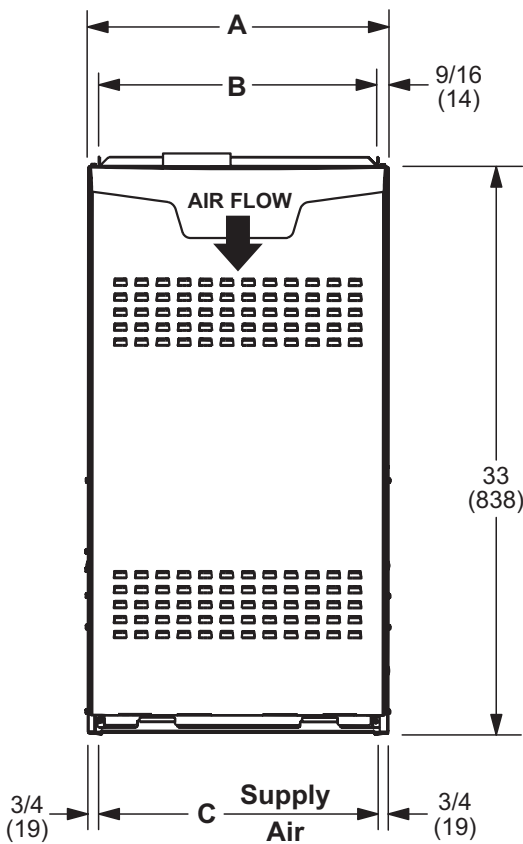
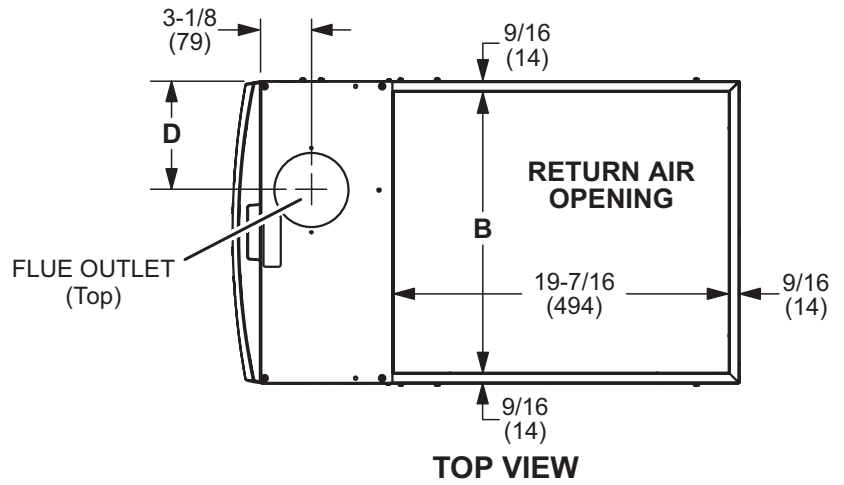
NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1).

NOTE - In the U.S. flue sizing must conform to the methods outlined in the current National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or applicable provisions of local building codes.

<sup>1</sup> Left side requires 4 in. clearance if single wall vent is used on 14-1/2 in. A" width cabinets, and 2 in. clearance on 17-1/2 in. B" width cabinets.

<sup>2</sup> Clearance for installation on combustible floor if optional Downflow Combustible Flooring Base is installed between furnace and combustible floor. Not required in add-on cooling applications if installed in accordance with local codes or National Fuel Gas Code ANSI-Z223.1.

# DIMENSIONS

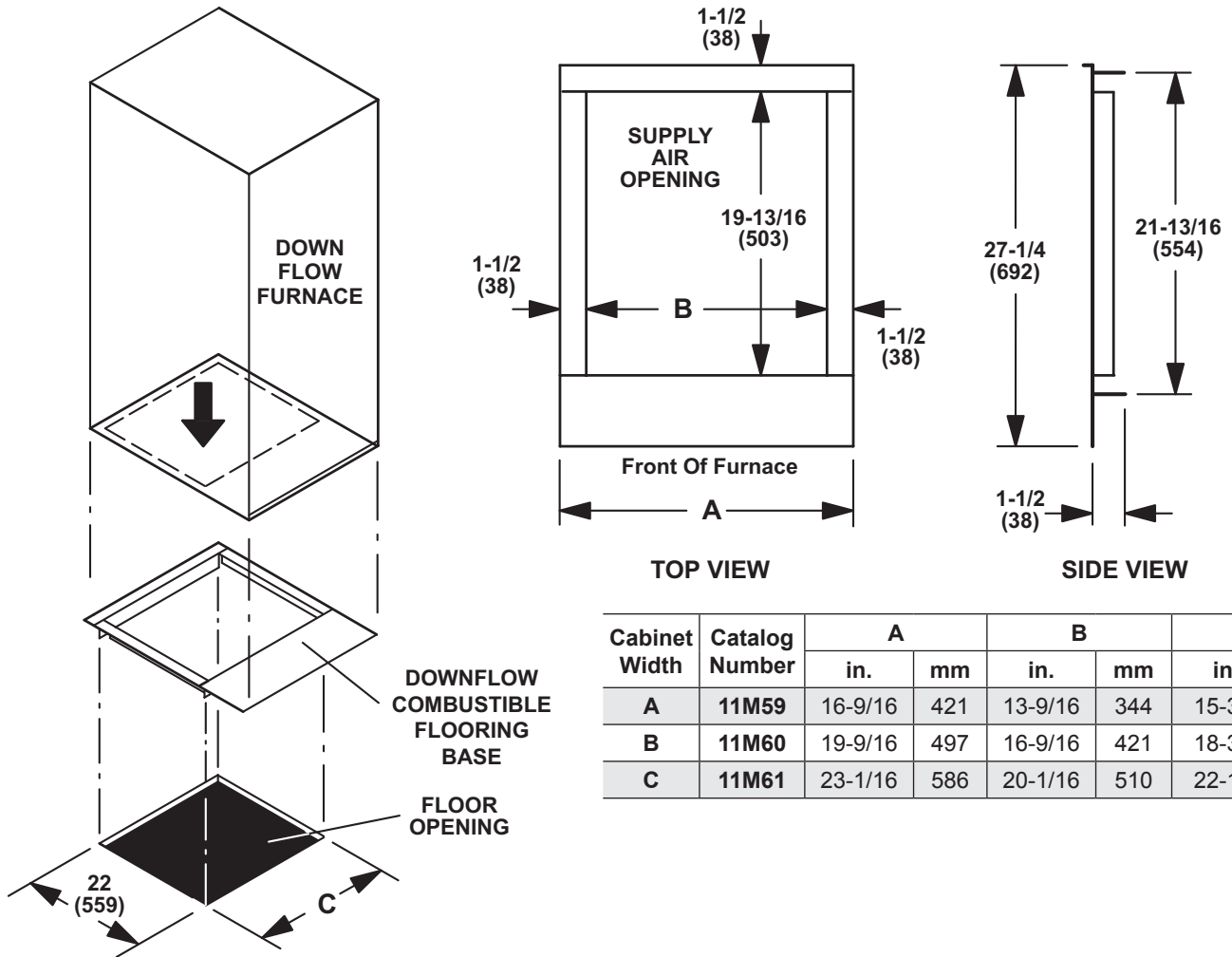


Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
EL280DF070P36A	14-1/2	368	13-3/8	340	13	330	4-3/4	121
EL280DF090P48B	17-1/2	446	16-3/8	416	16	406	6-1/4	159
EL280DF110P60C	21	533	19-7/8	504	19-1/2	495	8	203



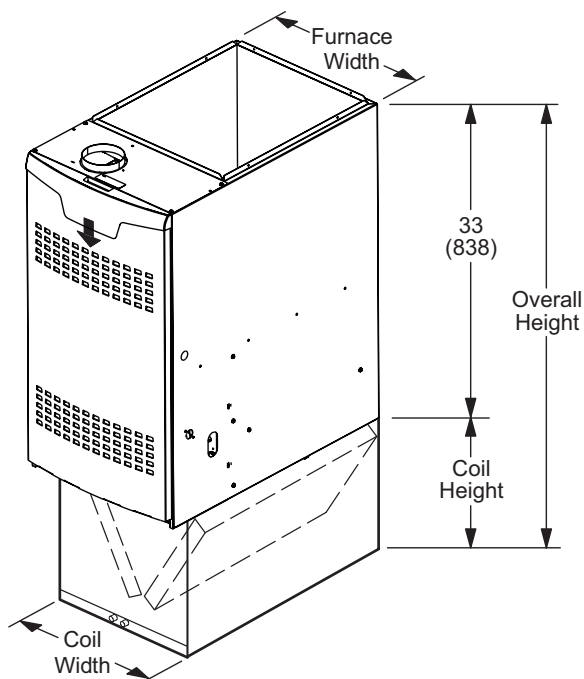
## OPTIONAL ACCESSORY DIMENSIONS

### DOWNFLOW COMBUSTIBLE FLOORING BASE



Cabinet Width	Catalog Number	A		B		C	
		in.	mm	in.	mm	in.	mm
A	11M59	16-9/16	421	13-9/16	344	15-3/4	400
B	11M60	19-9/16	497	16-9/16	421	18-3/4	476
C	11M61	23-1/16	586	20-1/16	510	22-1/4	565

## DIMENSIONS - FURNACE/COIL COMBINED DIMENSIONS

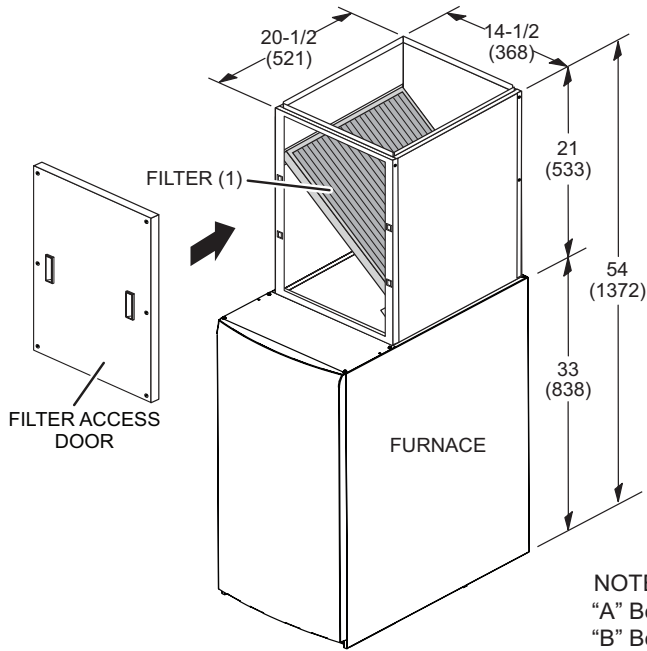


Model Number	Coil Width		Furnace Width		Coil Height		Overall Height	
	in.	mm	in.	mm	in.	mm	in.	mm
CR33-18A-F	17-1/2	446	14-1/2	368	14-1/8	359	47-1/8	1197
CR33-24A-F	17-1/2	446	14-1/2	368	14-1/8	359	47-1/8	1197
CR33-24B-F	17-1/2	446	17-1/2	446	14-1/8	359	47-1/8	1197
CR33-30/36A-F	17-1/2	446	14-1/2	368	16-1/8	410	49-1/8	1248
CR33-30/36B-F	17-1/2	446	17-1/2	446	16-1/8	410	49-1/8	1248
CR33-30/36C-F	21	533	21	533	16-1/8	410	49-1/8	1248
CR33-48B-F	21	533	17-1/2	446	20	508	53	1346
CR33-48C-F	21	533	21	533	20	508	53	1346
CR33-50/60C-F	24-1/2	622	21	533	23-5/8	600	56-5/8	2276

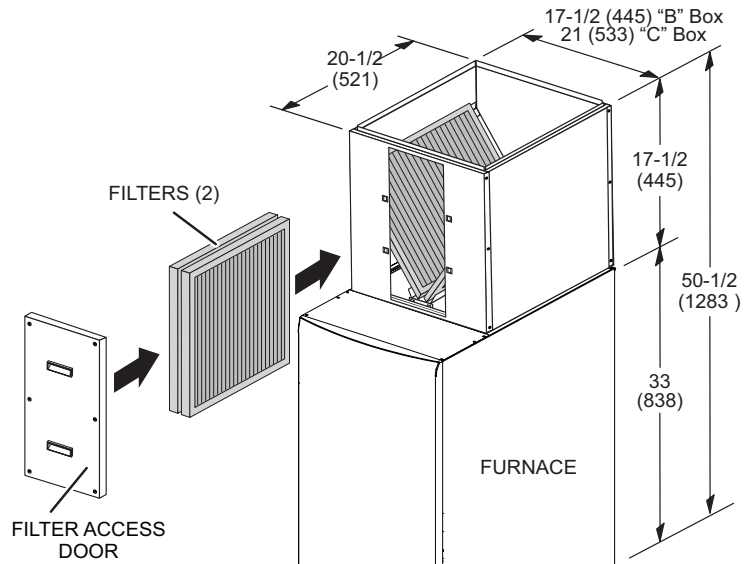
# OPTIONAL ACCESSORY DIMENSIONS

## DOWNFLOW FILTER CABINET

**"A" WIDTH FURNACES  
(Single Filter)**



**"B AND "C" WIDTH FURNACES  
(Two Filters)**



NOTE: Return Air Opening (W x D)  
"A" Box  $13\frac{1}{2} \times 19\frac{5}{8}$  (343 x 498)  
"B" Box  $16\frac{1}{2} \times 19\frac{5}{8}$  (419 x 498)  
"C" Box  $20 \times 19\frac{5}{8}$  (508 x 498)

## BLOWER DATA

**EL280DF070P36A PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1562	591	1386	539	1159	436	956	374
0.20	1506	553	1355	504	1149	418	953	361
0.30	1459	528	1314	473	1119	392	941	343
0.40	1390	500	1264	442	1082	374	915	323
0.50	1306	477	1200	415	1048	352	904	305
0.60	1213	441	1129	391	987	332	849	288
0.70	1140	417	1066	361	901	304	798	270
0.80	1038	395	975	342	836	283	717	244

NOTES - All air data is measured external to unit without filter  
(not furnished - field provided)

**EL280DF090P48B PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1929	755	1794	668	1585	572	1332	489
0.20	1864	717	1745	623	1544	540	1321	463
0.30	1779	683	1676	588	1496	510	1296	440
0.40	1694	647	1600	558	1443	473	1265	417
0.50	1596	607	1502	511	1363	440	1212	393
0.60	1483	577	1413	485	1258	406	1148	370
0.70	1340	544	1273	449	1148	374	1042	339
0.80	1221	505	1138	416	1018	350	917	307

NOTES - All air data is measured external to unit without filter  
(not furnished - field provided)

**EL280DF110P60C PERFORMANCE (Less Filter)**

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds							
	High		Medium-High		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	2760	1401	2325	1045	1888	871	1531	686
0.20	2670	1362	2319	1003	1937	847	1565	679
0.30	2557	1292	2257	964	1945	832	1605	674
0.40	2536	1287	2220	949	1935	812	1622	661
0.50	2384	1230	2152	911	1918	782	1626	644
0.60	2273	1191	2063	884	1884	762	1617	630
0.70	2197	1151	2021	875	1822	737	1574	610
0.80	2115	1140	1950	854	1749	708	1517	579

NOTES - All air data is measured external to unit without filter  
(not furnished - field provided)

## REVISIONS

Sections	Description of Change
Controls	Added iComfort® E30 Smart Thermostat and Remote Outdoor Temperature Sensor.



Visit us at [www.lennox.com](http://www.lennox.com)

For the latest technical information, [www.LennoxPROs.com](http://www.LennoxPROs.com)

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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